drinking water is of prime importance.
Nitrate infiltrates, from soils under intensive agricultural use or other sources, into groundwater and therefore in many cases into drinking water resources. An estimation of the Mean Residence Time (MRT) of groundwater as well as an investigation of the natural hydrological facts concerning groundwater recharge is possible by isotope-hydrology measurements (oxygen-18, tritium etc.) if there is no anthropogenic tritium contamination (e.g. waste disposal sites, water treatment plants etc.) or infiltration of river waters enriched in tritium.
From the commonly available methods to determine Mean Residence Times (MRT < 50 yrs) of waters for research and practical purposes, the following methods were tested (KRALIK et al. 2008):
1) Variation of the oxygen-18 isotopes
2) Tritium-model ages as routine method as well as
3) Tritium/Helium-3 ($^3H/^3He$) and
4) Chlorinated Fluor-Carbons (CFC) measurements
The main purpose was to obtain a statistical overview of the MRTs in the first few metres of the frequently used uppermost aquifer. Five standard monitoring wells of the Parndorfer Platte and the Traun Enns Platte were analysed by the Isotope Hydrology Section of the IAEA for CFC and $^3H/^3He$ concentrations.
Investigations in the groundwater body **Parndorfer Platte** (HÄUSLER 2007) included all six monitoring wells of the Austrian Water Quality Monitoring System (GZÜV). Thus, on a quarterly basis, 24 groundwater samples were collected and analysed. Four monitoring wells (67 %) show MRTs between 15-30 years and two monitoring wells (33 %) at the eastern border indicate MRT > 50 years. However, there is no simple relation between MRT and the nitrate or pesticide content. From the calculated MRTs it is evident that measures taken now to improve the groundwater quality will in most monitoring wells not show effects in a few years' time. However, monitoring wells with short MRTs can be used to test groundwater quality improvements within a short time period.

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Tectonothermal evolution of a Jurassic suture zone in the Greek Rhodope

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A Jurassic suture zone in the Greek Rhodope is studied in terms of structures, petrology and age. It represents a widely dispersed agglomerate of rocks which experienced continuous deformation and metamorphism from Early Jurassic to Late Cretaceous recorded in metapelites, metabasites and metaperidotites. The suture zone is located between a lower plate of Carboniferous/Permian and an upper plate of Late Jurassic gneisses. On the basis of different temperature conditions in the footwall compared to the hangingwall, the suture zone itself is divided into an upper and a lower subunit which experienced coherent deformation stages. A geodynamic scenario for the Greek Rhodope describes continuous subduction and related magmatism in the Mid Jurassic and in the Late Cretaceous. Variscan basement was detached from the European plate and experienced together with Permian oceanic rocks intense deformation and metamorphism close to ultra-high-pressure level at ≥180 Ma. The studied rocks define buoyant slivers which exhumed along the subduction thrust pathways as result of slab breakoff in the Late Jurassic. Hangingwall units of the suture zone were positioned at the base of the upper plate and experienced coaxial geometries and thermal reequilibration. Subsequent and final exhumation was due to high-grade SW-vergent shearing followed by low-angle NE-vergent normal faulting on-top of the exhuming wedge. The final architecture of the Greek Rhodope results from thermal overprints in the Tertiary and the formation of a southward propagating core complex in a back-arc position.

Type locality of the Hochreith Formation as part of the Lower Cretaceous Rossfeld basin fill of the Weitenau syncline revisited (Northern Calcareous Alps, Salzburg)

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The type locality of the Hochreith Formation, which is normally correlated with the Schrambach Formation (late Berriasian to Valanginian) or more likely the basal part of the Rossfeld Formation (late Valanginian to early Hauterivian), should be therefore the basal part of the sedimentary succession of the Early Cretaceous Rossfeld basin fill of the Weitenau syncline east of the type area of the Rossfeld Formation.
To prove the age of these cherty limestones we reinvestigate the type locality of the Hochreith Formation. The change from pure micritic limestones of the Oberalm Formation (Late Tithonian to Berriasian as proven by calpionellids in the Weitenau syncline) as part of the Kimmeridgian to Berriasian Plassen Carbonate Platform in a deep-water setting to the siliclastic influenced cherty limestones (?Hochreith Formation) should be contemporaneous with the drowning of the Plassen Carbonate Platform in Late Berriasian times. Interestingly fine-grained turbidites consist of shallow-water debris and thick mass-flow deposits of the Barmstein Limestones are missed in the Weitenau area. Upsection of the Hochreith Formation the younger (?Hauterivian to Aptian) sedimentary succession shows a coarsening upward trend with an increase of turbidites and mass-flows to the top of the succession.
The well bedded, cherty, bioturbated limestones with marly intercalations of the type locality bear a relatively poor radiolarian assemblage: *Acaeniotyle* sp., *Alievium* cf. *helenae*, *Archaeodictyomitra mitra*, *Archaeodictyomitra sixi*, *Cryptamorphella* cf. *dumitricai*, *Dictyomitra* sp., *Gongylothorax* cf. *favosus*, *Hisocapsa uterculus*, *Pseudodictyomitra* cf. *primitiva*, *Rhopalosyringium* sp., *Sphaerostylus* cf. *squinaboli*, *Tetracapsa* cf. *kaminogoensis*, *Williridellum* cf. *sujkowskii*, *Xitus rectularis*. This radiolarian fauna test the age of the Hochreith Formation as Late Kimmeridgian to Early Tithonian. Therefore a comparison with the Schrambach Formation or the lower Rossfeld Formation is obsolete. In fact the Hochreith Formation underly stratigraphically the Oberalm Formation.
On base of the detection of Late Kimmeridgian-Early Tithonian cherty limestones in the Weitenau syncline below the Oberalm Formation and the upsection following Rossfeld basin-like basin fill the Weitenau syncline cannot directly be compared with the sedimentary succession of the Rossfeld basin fill in the type area